

APPLICATION  
FOR  
UNITED STATES UTILITY PATENT

TITLE: ADHESIVE BANDAGE DISPENSER SYSTEM

APPLICANT: JOHN CHAO, PAULA ECHEVERRI, WILLIAM FIENUP,  
BRIAN HENNESSEY, CHRISTOPHER MCFADDEN,  
FRANCES RIVERA-MYERS, ANDREY SLIVINSKIY

## **ADHESIVE BANDAGE DISPENSER SYSTEM**

### **FIELD OF THE INVENTION:**

The present invention relates to a dispenser for prepackaged adhesive bandages.

### **BACKGROUND OF THE INVENTION:**

Packaged sterile bandages with adhesive tape included (popularly known as "Band-aids") are among the most widely utilized first-aid supplies available, particularly in the household setting. Due to the requirement for sterility, these bandages must be enclosed in an air-tight package and the adhesive zones must be covered by a removable foil. These individually wrapped bandages are typically placed in a paperboard or metal container with a hinge. The fundamental problem with this system is that the process of *retrieving* and *applying* a bandage is relatively awkward and time consuming. More specifically, when the need for a bandage arises, first the container of bandages must be retrieved from storage and opened, then the bandage must be extricated from its wrapping, next the tabs covering the adhesive must be removed, and finally, the bandage must be applied to the wound.

A wide variety of dispensers have been developed in order to address these issues; however, none of which adequately remedies all of the aforementioned inefficiencies. The list in Table 1 below highlights the most relevant patented concepts in chronological order by date of filing: Among the earliest known patents of this nature, U.S. Pat. No. 3,189,219, issued to Holzworth et al. in 1965, disclosed a hinged dispenser wherein conventional bandages could be loaded easily by a consumer and retrieved one-at-a-time. While this simple device elegantly solved the problem of ease of access, it did not address the issue of application – the bandages, once retrieved, are still individually wrapped and thus cumbersome to apply to the wound.

Effectively responding to the unmet need defined above, U.S. Pat. No. 3,899,077, issued to Spiegelberg, enabled the one-handed application of a bandage to a wound. The critical element of the design was that one end of the removable foil covering the adhesive zones of the bandage was attached to the cover so that said adhesive zone would be uncovered during the removal of the cover. Thus, by simply pulling the bandage out of the cover sleeve, one could now apply the bandage to the wound with the same hand. Given that this patent is now expired, we plan to utilize the design in conjunction with our own invention, detailed below.

Spiegelberg's follow-up invention, U.S. Pat. No. 4,194,624, was a storage receptacle for a multiple adhesive bandage pack using the one-handed bandage technology patented above. A simple ledge, or flange, extended from the front wall of a trough-shaped receptacle, preventing the lodged bandage pack from being removed as bandages were pulled from the pack. A studded key was used to unlock the bandage pack for replacement. One major shortcoming of this invention is that the bandages tend to be difficult to grasp, being in very close proximity to one another. One-handed retrieval is only achieved with effort.

The next evolutionary breakthrough in the bandage dispenser market involved the use of continuous reels of bandages. U.S. Pat. No. 4,735,342 to Goldstein, U.S. Pat. No. 4,872,593 to

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Behringer, U.S. Pat. No. 4,993,586 Taulbee et al., U.S. Pat. No. 5,133,477 to Etheridge et al., and U.S. Pat. No. 5,065,894 to Garland, all represent examples of dispensers of continuous rolls of bandages dispensed manually by cranks or by hand. With varying degrees of effort, a single bandage at a time can be retrieved from these machines, however there are a number of drawbacks to this design. For instance, each of these dispensers requires the use of two hands to apply a bandage. In addition, the dispensers each require very specialized and customized bandage packaging (conventional packaged bandages do not properly function). Finally, the coiling up of bandages on a reel undermines the integrity of the bandage itself, with the result that bandages end up curling up and adhering to themselves upon retrieval.

The Post-it™ invention in 1974 by the Minnesota Manufacturing & Mining Co. (3M) inspired a new generation of bandage dispensers in the mid-to-late 1990s. U.S. Pat. No. 5,271,522 to Ko et al., U.S. Pat. No. 5,358,140 to Pellegrino, and U.S. Pat. No. 6,079,190 to Simpson, all borrowed to varying degrees from the original 3M design where bandages are releasably adhered to each other in the stack along opposite ends of successive bandages, and each bandage is pulled through an opening in the dispenser. The critical drawback of this design is that it does not enable one-handed bandage retrieval and application. Bandages are either perforated or partially adhering to one another, with the result that there still exist tabs covering adhesive zones that must be removed prior to application.

U.S. Pat. No. 6,213,343 to Damikolas and U.S. Pat. No. 6,299,018 to Kimbrell, each disclose portable dispensers. Though the bandages allow simple retrieval of bandages one-at-a-time, they are quite expensive to manufacture, having complicated sets of gears. In addition, they do not allow for one-handed application, in part because they are not mountable to walls or tables.

The most recently issued patent related to bandage dispensers utilizes the push-button dispenser methodology used in lotion pumps. U.S. Pat. No. 6,662,967 to Roy allows for a variety of bandage sizes and shapes to dispense easily, one at a time, at the push of a button. Again, the bandages are still individually wrapped upon retrieval, so they require two hands to apply.

Despite the broad variety of prior art devices, there remains a need for a bandage dispensing device that allows for one-handed retrieval and application, while at the same time ensuring that individual bandages are easily removed without the risk of another bandage being removed at the same time.

**SUMMARY OF THE INVENTION:**

The present invention, as described in the preferred embodiment below, overcomes the aforementioned disadvantages by providing a bandage dispenser device which allows bandages to be individually removed with ease (i.e., without the risk of inadvertently retrieving another bandage simultaneously) and applied one-handedly to the wound.

In one general aspect of the invention, a pack of separable adhesive bandages is releasably joined at one end, and equipped with separation strips interconnecting adjacent bandages, preferably by being secured at their ends toward the dispensing end of one bandage and to the dispensing end or body of the adjacent bandage directly above. A dispenser shaped to hold the bandages has a slotted opening through which bandages may be pulled one at a time, and includes an internal holder such as a clamp for securing the joined end of the stack of bandages in position so that the end of a bandage to be dispensed protrudes out of the slot, the separation strip pulling the next bandage into dispensing position when one bandage is pulled out of the slot.

In the preferred embodiment an obstruction inside the frame, preferably, a flange element extending inwardly from the front wall of said dispenser, prevents removal of the pack from said slot of the dispenser, while permitting removal of individual bandages. The dispenser has a pivoting cover, hinged about an axis such that the cover swings towards the opening slot for reloading bandage packs.

Other aspects of the invention are directed to a dispenser designed for dispensing individual bandages in the manner described above, the specially designed bandage packs themselves, and the method by which the bandages are individually dispensed.

**BRIEF DESCRIPTION OF THE DRAWINGS:**

In order that the features and advantages of this invention may be fully comprehended, it will be described, by way of example, with references to the accompanying drawings in which:

FIG. 1 is a perspective view of a bandage pack, showing a separation strip which allows for the advancement of contiguous bandages after removal of said bandages

FIG. 2 is a perspective view of a preferred embodiment of the dispenser, with the enclosed adhesive bandage pack releaseably locked therein.

FIG. 3 is a side view of the dispenser of the preceding figures in a fully closed configuration, similar to that shown in FIG. 2. The bandage pack is loaded for retrieval of the bottom-most bandage.

FIG. 4 is a side view of the dispenser in the preceding figures in a fully open position with the bandage pack loaded.

FIGS. 5 -6 are perspective views of the dispenser in the preceding figures showing a bandage removed with one hand. One adhesive zone of the bandage is exposed upon removal of said bandage.

**DESCRIPTION OF THE PREFERRED EMBODIMENT:**

In the preferred embodiment disclosed below, a specially designed dispenser is loaded with bandage packages of uniform length which may advantageously comprise a modified version of Cederroth Industrial Products' commercially available Salvequick packs (U.S. Trademark cancelled March 23, 2003, U.S. Pat. No. 3,899,077 to Spiegelberg relating to original bandage packs expired). Each adhesive bandage typically has a central dressing and an adhesive zone on each side of said dressing. Each bandage may be encased in a removable protective foil in which one end of the foil is attached to the cover sheet so that said adhesive surface layer will be uncovered during the removal from the cover. Each set of bandages will be attached at the end opposite the retrieval opening by a staple or adhesive, or by a variety of other possible methods. The individual casings will consist of two endless sheets made of paper, plastic, or any other light material, joined together by means of adhesive, welding, or the like. Each bandage pack is preferably encased in an outer open-ended bandage pack made of cardboard, chipboard, or a similar material.

As shown in Fig. 1, the bandage packs laid out in U.S. Pat. No. 3,899,077 to Spiegelberg are modified by adding separation strips 2 attaching each contiguous bandage 1 together. Each separation strip 2, which may be fabricated of paper, plastic, or the like, is attached at the tab 5 of the exposed bandage and to the dispensing end or body 4 of the next bandage in the stack at the casing enclosing said bandage. Such separation strip 2, when utilized in conjunction with the dispenser described below, allows for the advancement of each contiguous bandage 1 after retrieval of the bandage above said bandage.

FIGS. 2-6 show a dispenser according to this invention which comprises a base 7 and a cover 8, hinged about an axis 9 such that the cover swings towards the opening slot 6 through which one bandage at a time is manually pulled. The base and cover each comprise a continuous curved wall, the cover fitting snugly against a portion of the base in the fully closed configuration, and a pair of symmetrical, parallel side walls. On the top left-hand corner of the dispenser, shown in FIGS. 2-4, said hinge 9 is comprised of opposed pins extending outwardly from the side walls of the base, and a corresponding set of holes on the cover are provided in the side walls of the base on the axis of the dispenser for receiving the pins and pivotally raising the cover to load each replacement bandage pack. Note that there are other methods of achieving said hinge system, although we have described the preferred method. The base and cover are preferably formed of a durable and resilient plastic.

The cover piece 8 includes a flange element 11 which extends inwardly therefrom a sufficient distance such that when the bandage pack is positioned within the dispenser, the flange will overlie a portion of the pack, so as to prevent the unintentional removal of the pack from the dispenser.

As illustrated in FIGS. 1, 5 and 6, the bandages themselves are supplied with paper or plastic wrappers, such as that mentioned in the aforementioned patent, whereby an extraction from the pack will allow one of the two adhesive zones on either side of the central dressing to be automatically freed of the foil covering for one-handed application to the wound. The bandage